

The TAH20 is a completely encapsulated thick film resistor in the TO220 package outline. Rated for 20 watts @ 25°C case temperature, these resistors are electrically isolated, and molded in a high temperature case.

Designed for heat sink mounting, the symmetrical package is ready for use with snap-on style heat sinks (we recommend use of thermal grease). The TAH20 Series is very low inductance, and available in a wide range of resistance values in standard 5% tolerance, and 1% available by special order.

## FEATURES

- 20 Watt Power Rating at 25°C Case Temperature
- High Pulse Tolerant Design
- Quick-snap Molded Package
- Very Low Inductance Design
- Resistor Package Electrically Isolated from Heat Sink
- Low Thermal Resistance to Heat Sink @  $R_{TH} < 6.25^\circ\text{C/W}$
- Tube Packaging Available

## APPLICATIONS

- Frequency Conversion
- High Frequency Balancing
- Snubbers

## SPECIFICATIONS

### Electrical

**Resistance Range:** 0.05Ω to 10KΩ, other values available upon request

**Tolerance:** ±5% stock  
1% Available on request

**Temperature Coefficient:**  
Referenced to 25°C,  
ΔR taken at +105°C;  
1 to 10Ω: ±(100ppm+0.002Ω)/°C  
10Ω & up: ±50ppm/°C

**Max Operating Voltage:** 350V

**Dielectric Strength:** 1,800 VAC

**Power Rating:** 20W @ 25°C case temperature; see derating curve, next page

**Insulation Resistance:**  
10GΩ min.

### Momentary Overload:

2x rated power for 5 seconds where applied voltage ≤ 1.5 times max. operating voltage. ΔR ± (0.3% + 0.001Ω) max.

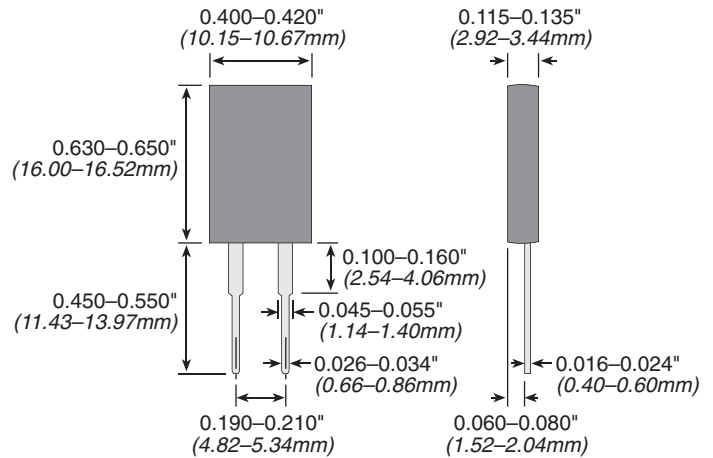
**Lead Material:** Tinned Copper

**Mounting:** Requires the use of a snap-on style heat sink. A thermal compound should be properly applied.



# TAH20 Series

## 20 Watt TO220 Style Thick Film Power Resistors RoHS Compliant



### PERFORMANCE DATA

<b>Load Life</b>	MIL-R-39009, 2000 Hours @ Rated Pwr	ΔR = ±(1.0% + 0.001) Ω
<b>Thermal Shock</b>	MIL-R-STD-202, Method 107, Cond. F	ΔR = ±(0.3% + 0.001) Ω max
<b>High Freq Vibration</b>	MIL-R-STD-202, Method 204, Cond. D	ΔR = ±(0.2% + 0.001) Ω max
<b>Terminal Strength</b>	MIL-R-STD-202, Method 211, Cond. A (Pull Test) 2.4N	ΔR = ±(0.2% + 0.001) Ω max
<b>Moisture Resistance</b>	MIL-R-STD-202, Method 106	ΔR = ±(0.5% + 0.01) Ω max

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Ohmite's new TCH35 TO220 package resistor provides 35 watts of steady state power when properly used in today's well defined heat sink applications.

These very low inductance resistors are built under proprietary processes that deliver 75% more power handling capability than other TO-220 package resistors of similar size.

Standard lead forms are provided for manual or automatic insertion.

A single screw mounting tab connects to the heat sink and should be accompanied by the use of a thermal compound. The TCH35 Series offers a low thermal resistance to the heat sink of <math>4.28^\circ\text{C/W}</math>.

## FEATURES

- 35W Power Rating @ 25°C
- Very Low Inductance Design
- Single Screw Mounting
- Low Thermal Resistance to Heat Sink @  $R_{TH} < 4.28^\circ\text{C/W}$
- Resistance Element is Electrically Insulated from Metal Heat Sink Mounting Tab

## APPLICATIONS

- Switching Power Supplies
- Snubbers
- High Frequency
- Voltage Regulation
- Low Energy Pulse Loading

## SPECIFICATIONS

### Electrical

**Resistance Range:** 0.1Ω to 10KΩ (higher values on request subject to derating)

**Resistance Tolerance:**  
± 5% standard  
± 1% available on request

**Temperature Coefficient:**  
Referenced to 25°C,  
ΔR taken at +105°C  
10Ω and above: ±50 ppm/°C  
1Ω to 10Ω: ±(100ppm + 0.002Ω)/°C

**Max. Operating Voltage:** 350V

**Dielectric Strength:** 1800 VAC

**Insulation Resistance:** 10GΩ min.

**Momentary Overload:** 2x rated power for 5 seconds as long as the applied voltage ≤ 1.5 times the continuous operating voltage, where ΔR ± (0.3% + 0.01Ω) max

**Lead Material:** Tinned Copper

**Maximum Torque:** 0.9 Nm

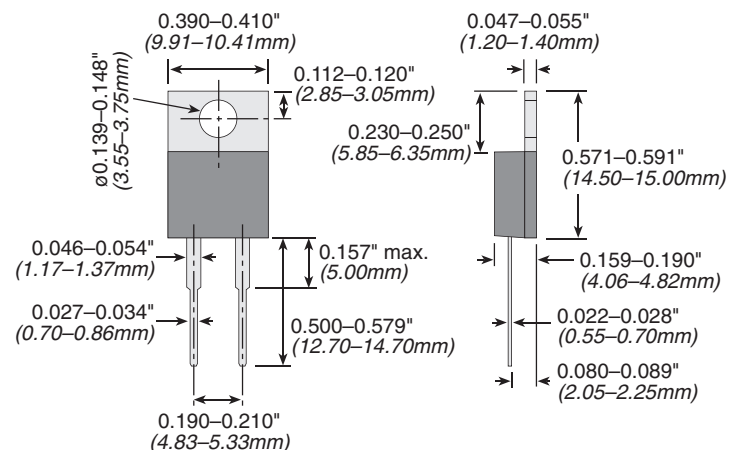
**Power Rating:** 35 Watts @ 25°C case temperature; see derating curve, next page

**Working Temperature Range:**  
-55°C to +175°C



# TCH35 Series

## 35 Watt TO220 Style Thick Film Power Resistors RoHS Compliant



### PERFORMANCE DATA

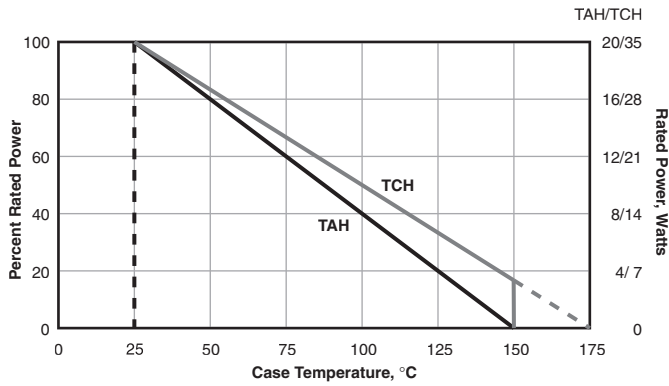
<b>Load Life</b>	MIL-R-39009, 2000 Hours @ Rated Pwr	ΔR = ±(1.0% + 0.01) Ω
<b>Thermal Shock</b>	MIL-R-STD-202, Method 107, Cond. F	ΔR = ±(0.3% + 0.01) Ω max
<b>High Freq Vibration</b>	MIL-R-STD-202, Method 204, Cond. D	ΔR = ±(0.2% + 0.01) Ω max
<b>Terminal Strength</b>	MIL-R-STD-202, Method 211, Cond. A (Pull Test) 2.4N	ΔR = ±(0.2% + 0.01) Ω max
<b>Moisture Resistance</b>	MIL-R-STD-202, Method 106	ΔR = ±(0.5% + 0.01) Ω max

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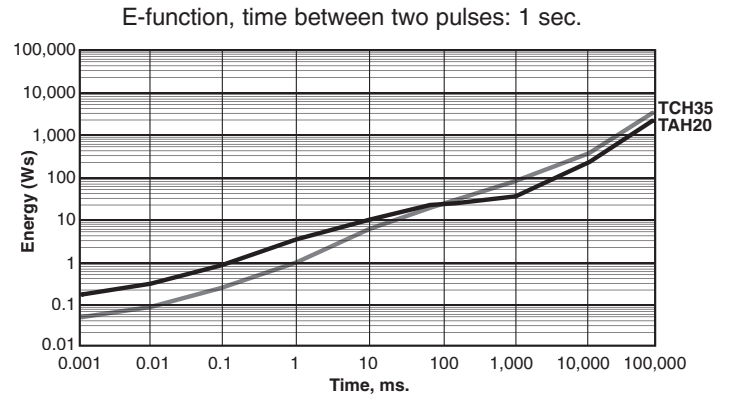
# TAH20/TCH35 Series

## 20 Watt & 35 Watt TO220 Series Thick Film Power Resistors (continued)

### DERATING CURVE



### PULSE-FORM



### ORDERING INFORMATION

**TCH35P10R0JE**

**Series**  
TCH35 = 35W  
TAH20 = 20W

**Ohm Value**  
Example:  
2R40 = 2.4 Ohms  
2K40 = 2400 Ohms

**Package Code**

**Tolerance**  
F = 1%  
J = 5% Standard

**RoHS Compliant**  
Non-compliant  
version not  
recommended for  
new designs

### STANDARD VALUES

E24 standard values (+25 & 50), 1% and 5% tolerance

0.10	1.0	10	100	1,000	10,000
0.11	1.1	11	110	1,100	
0.12	1.2	12	120	1,200	
0.13	1.3	13	130	1,300	
0.15	1.5	15	150	1,500	
0.16	1.6	16	160	1,600	
0.18	1.8	18	180	1,800	
0.20	2.0	20	200	2,000	20,000
0.22	2.2	22	220	2,200	
0.24	2.4	24	240	2,400	
0.25	2.5	25	250	2,500	
0.27	2.7	27	270	2,700	
0.30	3.0	30	300	3,000	
0.33	3.3	33	330	3,300	
0.36	3.6	36	360	3,600	
0.39	3.9	39	390	3,900	
0.43	4.3	43	430	4,300	
0.47	4.7	47	470	4,700	
0.050	0.50	5.0	50	500	5,000
0.051	0.51	5.1	51	510	5,100
0.056	0.56	5.6	56	560	5,600
0.062	0.62	6.2	62	620	6,200
0.068	0.68	6.8	68	680	6,800
0.075	0.75	7.5	75	750	7,500
0.082	0.82	8.2	82	820	8,200
0.091	0.91	9.1	91	910	9,100

Consult factory for current stock disposition.